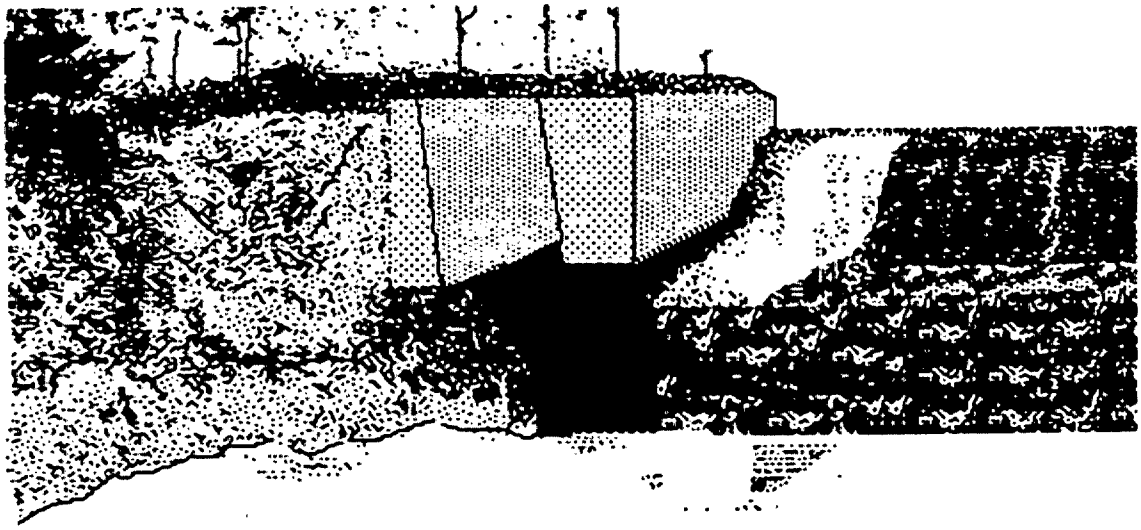
US Army Corps
of Engineers
New England Division

DEFINITE PROJECT REPORT

LITTLE RIVER (LITTLE RIVER LOWER DAM)

BELFAST, MAINE

EMERGENCY STREAMBANK PROTECTION



FEBRUARY 1987

SYLLABUS

This Definite Project Report was prepared under the special continuing authority contained in Section 14 of the 1946 Flood Control Act, as amended, to determine the need and feasibility of constructing Emergency Streambank Protection along the Little River, Belfast, Maine. Streambank erosion is endangering the southern abutment of the Little River Lower Dam. Studies contained in this report determined that the construction of an approximate 80-foot long precast concrete modular wall adjacent to the abutment would be the most feasible solution to alleviate erosion. Total project costs (including Lands and Easements) are estimated at $140,000 of which $105,000 are Federal and $35,000 are Non-Federal. The benefit to cost ratio is 1.4 to 1. This report concludes that Federal participation to alleviate the erosion problem at the Little River Lower Dam is justified and recommends approval to proceed to the preparation of plans and specifications for construction.

BELFAST, MAINE
DEFINITE PROJECT REPORT
TABLE OF CONTENTS

DEFINITE PROJECT REPORT
EMERGENCY STREAMBANK PROTECTION
LITTLE RIVER LOWER DAM
LITTLE RIVER
BELFAST, MAINE
FEBRUARY 1987

1. AUTHORIZATION

This report provides results of detailed project scope investigations accomplished under the special continuing authority contained in Section 14 of the 1946 Flood Control Act, as amended, to determine the need and feasibility of constructing Emergency Streambank Protection along the Little River, Belfast, Maine. Federal assistance to alleviate erosion endangering the Little River Lower Dam was requested by the Resource Conservation and Development Project Coordinator for the Belfast Water District by letter dated 7 August 1986 (see Enclosure 1).

Under the provisions of Section 14, Federal participation may be possible for the protection of public works and public use facilities that are endangered by streambank or shoreline erosion. Work accomplished under this authority must be complete, effective, efficient and acceptable. The project must be economically justified and advisable in the opinion of the Chief of Engineers. Federal participation under Section 14 is limited to $500,000.

2. DESCRIPTION OF AREA

The town of Belfast, Maine, is located approximately twenty miles south of Bangor (see Enclosure 2). Belfast lies on Maine's southern shoreline at the junction of the Passagassawakeaug River and Belfast Bay.

The majority of the Little River Watershed lies within the corporate limits of Belfast. The Little River has a drainage area of approximately 16.7 square miles and discharges into Belfast Bay approximately two miles south of Belfast. There are two run-of-the-river dams on the Little River approximately one mile apart. The Little River Upper Dam impounds water for the primary purpose of replenishing the Little River Lower Reservoir during periods of low water.

The Little River Lower Dam which is owned by the Belfast Water District is located approximately two miles south of the center of Belfast and approximately 700 feet upstream from the river's confluence with Belfast Bay (see Enclosure 3). The original stone masonry dam was built in 1887 and reconstructed following a breach from high waters in 1943. The dam is a run-of-the-river dam, of concrete and dry-stone masonry construction, 30 feet high (distance between headwater and tailwater), and 126 feet long with a 91-foot long ogee spillway section. Although the reservoir served as the primary source of water for a poultry plant until 1979 when the plant was destroyed by flooding, the reservoir's present primary function is as an emergency water supply source for the town of Belfast.

3. PRIOR STUDIES/REPORTS

August 1967: The Soil Conservation Service prepared a preliminary investigation on the feasibility of constructing other impoundments on the Little River for flood control, municipal water supply and recreation. Although several sites indicated feasibility, more detailed studies were not conducted.

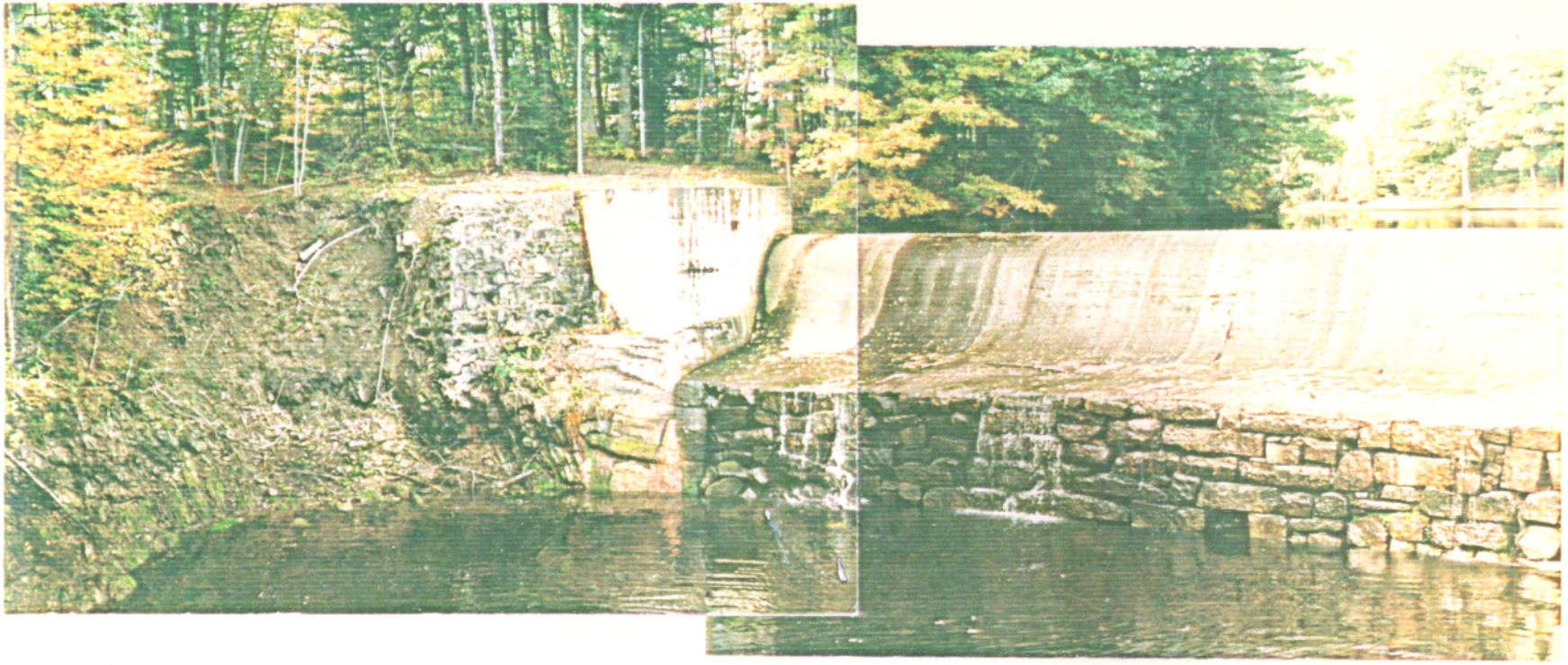
November 1979: The Corps of Engineers, New England Division (NED) prepared a Phase I Inspection Report under the National Dam Inspection Program for the Little River Lower Dam, ME 00288, State No. 5090. The report recommended that although the dam was in fair condition, repairs to the dam and remedial actions to alleviate erosion should be implemented by the owner within one-year. These recommendations were not implemented.

4. PROBLEM DESCRIPTION

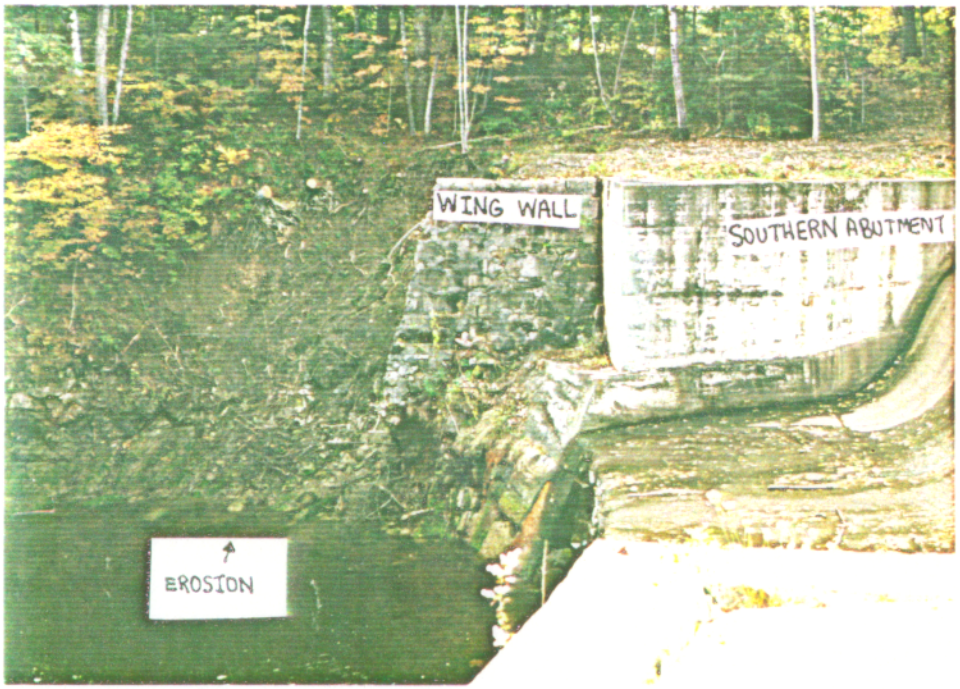
The streambank erosion problem begins adjacent to the dam's south wing wall and extends approximately 60 feet downstream. Erosion has progressed behind the wing wall and at a point 15 feet downstream of the wall extends approximately 20 feet into the southern embankment. A three foot section of the wing wall foundation actually failed during the course of this study (see photographs on next page).

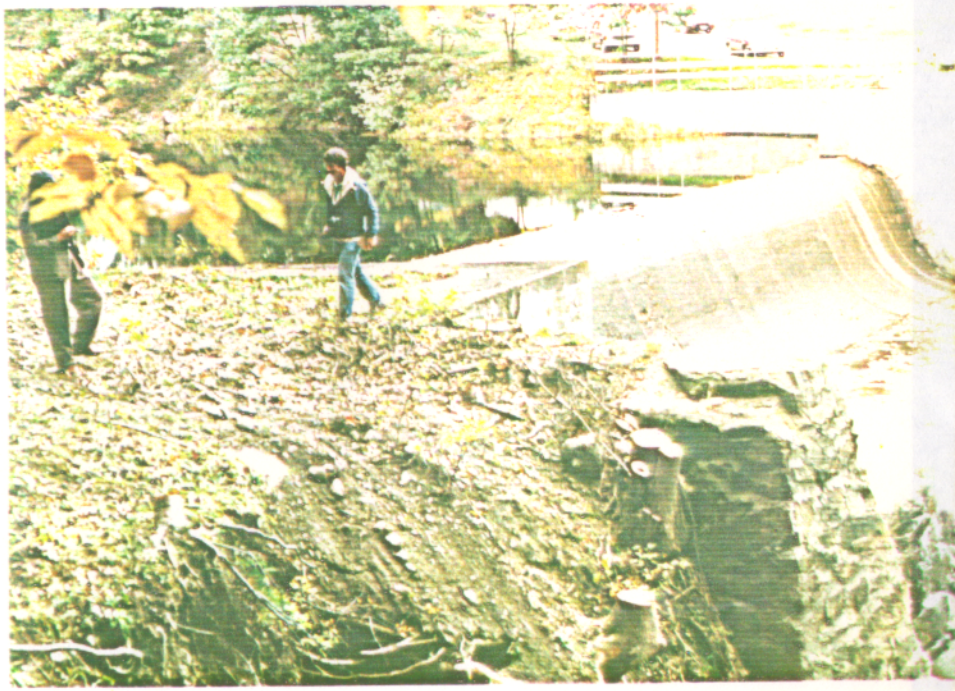
The history on the progression of erosion was not known by the local sponsor; however, the 1979 Phase I Inspection Report referenced in section 3 above, identified erosion as a potential endangerment to the abutment. The causes of erosion are a combination of tidal fluctuations (8 to 10 feet twice each day), eddy currents from water flowing over the spillway, ice action, and weathering of the bedrock. Evidence of the significant turbulence that can be created by water flowing over the spillway is a 5-foot deep scour hole immediately downstream of the dam.

Due to the current structural conditions of the south wing wall (which provides protection for the abutment), it is probable that the wing wall could collapse prior to construction of streambank protection measures by NED. Failure of the wing wall would not result in immediate failure of the dam; but without it providing protection, the rate of erosion around the abutment would be significantly increased. This would eventually result in a displacement of the abutment and then a breach in the earth embankment (see Enclosure 4). It is assumed that a breach of the dam would be gradual and result in only minimal downstream damages. However, the dam is in imminent danger of failure and this is an emergency situation requiring expeditious action.



LITTLE RIVER LOWER DAM





5. PLAN FORMULATION

During the course of detailed project studies, several alternative plans to address the erosion problem were evaluated. They are: (a) Do Nothing; (b) Stone Revetment; (c) Grid Block Revetment; (d) Gabion Wall; (e) Cast-In-Place Concrete Wall; and (f) Precast Concrete Modular Wall.

(a) Do Nothing: This plan provides no bank protection allowing erosion to continue. Permanent structural damage to the abutment from shifting of the earth embankment would occur and eventually result in breach of the dam through the earth embankment. Due to the importance of this supply of water to the town of Belfast (to be discussed in section 8), a source must be maintained. As further discussed in section 8, the least costly alternative will be to rebuild the embankment and abutment.

(b) Stone Revetment: The placement of stone revetment along the bank is an economically impractical plan due to the extremely large stone that would be required to withstand the strong currents. Velocities at the toe of the spillway were estimated to be between 25 feet per second (fps) and 30 fps during a 100-year flood event.

(c) Grid Block Revetment: The steepness of the streambank in conjunction with the width of the river precluded the effective use of grid blocks as an alternate plan. This alternative was eliminated from further consideration.

(d) Gabion Wall: Due to the possibility of ice flowing over the spillway and severing the gabion basket wires which hold the rock in place, this plan was eliminated from further consideration.

(e) Cast-In-Place Concrete Wall: This alternative is a feasible solution to the erosion problem. Past experience with this measure; however, indicates that if a precast concrete modular wall system is also feasible for the given conditions, it would be less expensive.

(f) Precast Concrete Modular Wall: A concrete precast modular wall was also investigated as a potentially feasible alternative. The wall would adequately protect the streambank, withstand ice impact forces and high water velocities, and be less costly than the cast-in-place concrete wall. This alternative was chosen as the selected plan.

6. SELECTED PLAN

The selected plan to resolve the erosion problem at the downstream southern abutment of the Little River Lower Dam would consist of replacing the existing wing wall with approximatly 80 linear feet of precast concrete modular wall (see Enclosures 5 and 6). This wall would vary in height from 10 to 20 feet and

vary in depth from 4 to 8 feet. This plan was designed to withstand a 25-year event and incorporates the most cost-effective criteria that would resolve the erosion problem.

The proposed wall system would consist of a series of hollow, precast, interlocking, reinforced concrete modules. The modules would be backfilled with earth materials. The wall would be supported on a concrete footing bearing on bedrock. Compacted granular fill would be placed behind the wall.

The selected plan would provide streambank protection to prevent erosion from endangering the southern abutment of the Little River Lower Dam. However, this protection would not remedy any other deficiencies previously identified that may affect the safety or integrity of the dam. Specifically, those items recommended for repair by studies accomplished under Phase I of the National Dam Inspection Program in November 1979 should be implemented by the Belfast Water District. These items include repairs to the dry-stone-masonry walls on the spillway and north bank, repairs to the low level outlet system and removal of trees and brush along the south bank.

7. ESTIMATES OF FIRST COSTS AND ANNUAL CHARGES

Estimates of Federal and non-Federal first costs and annual charges for the proposed project are presented in the table on the next page. The majority of lands and easements required for project construction are owned by the local sponsor. The required non-Federal share is twenty-five percent of the project costs.

Of the total project first costs of $140,000 the Federal share would be $105,000, and the non-Federal share would be $35,000 (an estimated $10,000 in lands and damages and $25,000 as a cash contribution). Total project annual costs of $14,400 were computed assuming a project life of 25 years and an interest rate of 8-7/8 percent. This includes an estimated annual maintenance cost of $300.

PROJECT FIRST COSTS AND ANNUAL CHARGES
LITTLE RIVER LOWER DAM
BELFAST, MAINE
(JANUARY 1987 PRICE LEVEL, 25-year life, 8-7/8% interest rate)

ITEM	QUANTITY	UNITS	UNIT PRICE	COST
SITE PREPARATION	1	JOB	$5,000.00	$5,000
BEDROCK EXCAVATION	160	CY	30.00	4,800
COMMON EXCAVATION	250	CY	7.00	1,800
COMPACTED GRAVEL FILL	600	CY	15.00	9,000
TOPSOIL AND SEED	390	SY	4.00	1,600
STONE PROTECTION	40	CY	40.00	1,600
MODULAR WALL UNIT				
4-FOOT WIDE	880	SF	30.00	26,400
6-FOOT WIDE	290	SF	32.00	9,300
8-FOOT WIDE	100	SF	35.00	3,500
CONCRETE FOOTING	20	CY	200.00	4,000
			SUBTOTAL	$67,000
			CONTINGENCY	$16,800
			LANDS AND DAMAGES	$10,000
			ENGINEERING AND DESIGN	$32,300 *
			SUPERVISION AND ADMINISTRATION	$13,900
			TOTAL FIRST COST	$140,000
			FEDERAL SHARE (75%)	$105,000
			NON-FEDERAL SHARE (25%)	$35,000

* Does not include pre-authorization costs of $20,000

ANNUAL COSTS

Federal	
Interest and Amortization	$10,600
Non-Federal	
Interest and Amortization and Operation and Maintenance (includes $300 for annual maintenance)	$3,800
TOTAL ANNUAL COST	$14,400

8. ESTIMATE OF BENEFITS AND BENEFIT-COST RATIO

The selected plan of constructing a precast concrete wall would prevent erosive actions from breaching the southern abutment of the dam which would result in the loss of a valuable water supply source to the town of Belfast. This reservoir impounded by the dam is of vast importance to Belfast for the following reasons:

(a) Emergency Water Supply (safe yield of 2.5 Million Gallons per day(MGD)) for fire protection and non-potable usage. Since the two water supply wells that serve the town are 3 to 4 miles away, this is the primary source of water in the event of power loss, line breakage or well contamination.

(b) Since the present wells are now running at maximum capacity, the reservoir provides a source of water for any future development in the town. Specifically, if the poultry plant that was damaged 7 years ago by flooding returns to its location, this reservoir would be it's only source of water.

(c) The reservoir has the potential for recreation uses by the town.

(d) The dam reduces siltation from upstream erosion that would flow into Belfast Bay. Siltation could result in environmental degradation of the downstream estuary.

The two most likely "without" project conditions would be either rebuilding the abutment and embankment after they have failed, or constructing a one-mile pipe line from the Upper Little River Dam to the pump house at the Lower Little River Dam. It is assumed that these plans could be implemented prior to failure of the dam. An analysis of these two situations indicate that rebuilding the abutment and embankment would cost $195,000 and constructing another pipeline would cost $390,000. Assuming that the least costly plan would be accomplished by the local sponsor without Corps participation, the project benefits from protecting the dam would be the rebuilding costs of $195,000 or $20,000 annually based on an interest rate of 8-7/8 percent over 25 years and including $400 in annual maintenance costs.

By constructing the selected plan, expenditure of the $20,000(annual) would be prevented. Based on this annual benefit of $20,000, and annual costs of the selected plan of $14,400, the benefit to cost ratio for the selected plan is 1.4 to 1.

9. ENVIRONMENTAL AND CULTURAL RESOURCES ANALYSIS

No significant environmental or archaeological impacts from implementation of the selected plan have been identified (see Enclosure 7). State fishery agencies however, are concerned that spawning of smelt in the reach below the dam may occur annually during the months of April and May. Due to this concern,

construction efforts would not be undertaken during this time period. Prior to construction, application will be made to obtain Water Quality Certification and a Consistancy Determination pursuant to Maine's Coastal Area Plan through the Maine Department of Environmental Protection, Bureau of Land Quality Control.

Although the dam was originally constructed in 1887, it's historic integrity was diminished by the severe damage caused by the breach in 1941 and the incorporation of new materials in the 1943 reconstruction. Therefore, it is unlikely that the dam is eligible for inclusion in the National Register of Historic Places. The Maine State Historic Preservation Officer concurs with NED's determination that the selected plan will have "no effect" upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

10. REQUIREMENTS OF LOCAL COOPERATION

Local officials are aware of the requirements of local cooperation for participation in an emergency streambank protection project along the Little River in Belfast, Maine. Belfast Water District officials reviewed the draft Local Cooperation Agreement and have indicated that they will provide the following assurances (see Enclosure 8):

1. Provide without cost to the United States, all lands, easements, rights-of-way, and utility relocations necessary for project construction.

2. Hold and save the United States free from damages due to the construction, operation and maintenance of the project, except where such damages are due to the fault or negligence of the United States or its contractors.

3. Maintain and operate the project after completion without cost to the United States in accordance with regulations prescribed by the Secretary of the Army. Annual operation and maintenance costs are currently estimated to be $300. This includes, but is not limited to, inspection, patchwork, etc.

4. Contribute 25 percent of actual cost of construction and preparation of Plans and Specifications. A minimum cash contribution of 5 percent of these costs is required. Non-Federal contribution is currently estimated at $35,000 (includes an estimated $10,000 for lands and damages and $25,000 as a cash contribution). Final cost sharing amounts will be determined when project design is substantially complete and real estate appraisals made.

5. Assume the responsibility for all costs in excess of the Federal cost limitation of $500,000. Current project costs are estimated at $140,000.

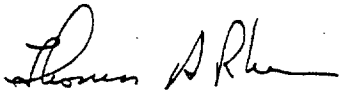
6. Prevent future encroachment which might interfere with proper functioning of the project.

7. Comply with Title VI of the Civil Rights Act of 1964 (78th Stat. 241) and Department of Defense directive 5500.11 issued pursuant to and published in Part 300 of Title 32, Code of Federal Regulations.

8. Comply with the requirements of non-Federal cooperation specified in Sections 210 and 205 of Public Law 91-646 approved 2 January 1971, entitled: "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970."

11. RECOMMENDATIONS

It is recommended that this report be approved as a basis for the preparation of Plans and Specifications for construction of the selected plan described herein under authority contained in Section 14 of the 1946 Flood Control Act.

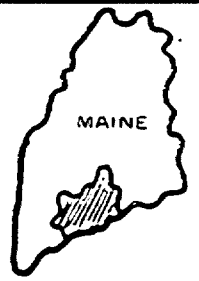


THOMAS A. RHEN
Colonel, Corps of Engineers
Division Engineer

Enclosures:
1. Letter Requesting Study
2. Vicinity Map
3. Study Area Map
4. Method of Failure
5. Selected Plan
6. Selected Plan Sections
7. Environmental Correspondence
8. Letter of Intent

TIME & TIDE
RC&D
Resource Conservation & Development Project

U.S ROUTE 1 WALDOBORO, MAINE 04572 TEL 207-832-5348



August 7, 1986

Mr. Joseph Ignazio, Chief
Planning Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02154

Dear Mr. Ignazio:

The Time & Tide RC&D was contacted by the Belfast Water District regarding an erosion problem near the outlet of the dam on Little River in Belfast. It appears that the erosion is influenced by tidal water.

I spoke to Tom Bruha of your agency, and he suggested I write to you.

Would it be possible to have someone look at this situation to see if the Corps of Engineers can help in any way?

We would appreciate anything you could do. You can reach me most mornings between 8 and 9 a.m. at 207-832-5348.

Looking forward to hearing from you.

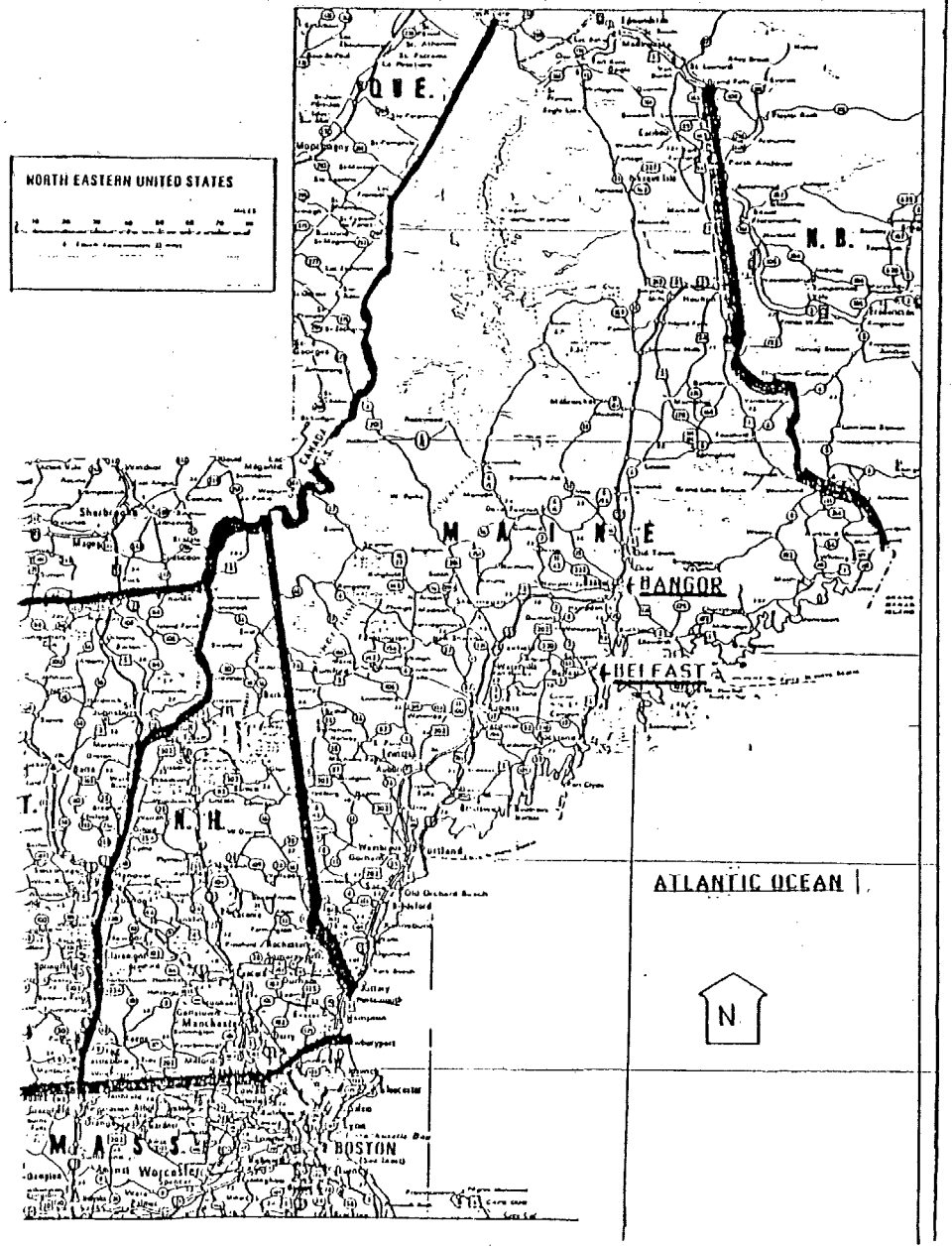
Sincerely,

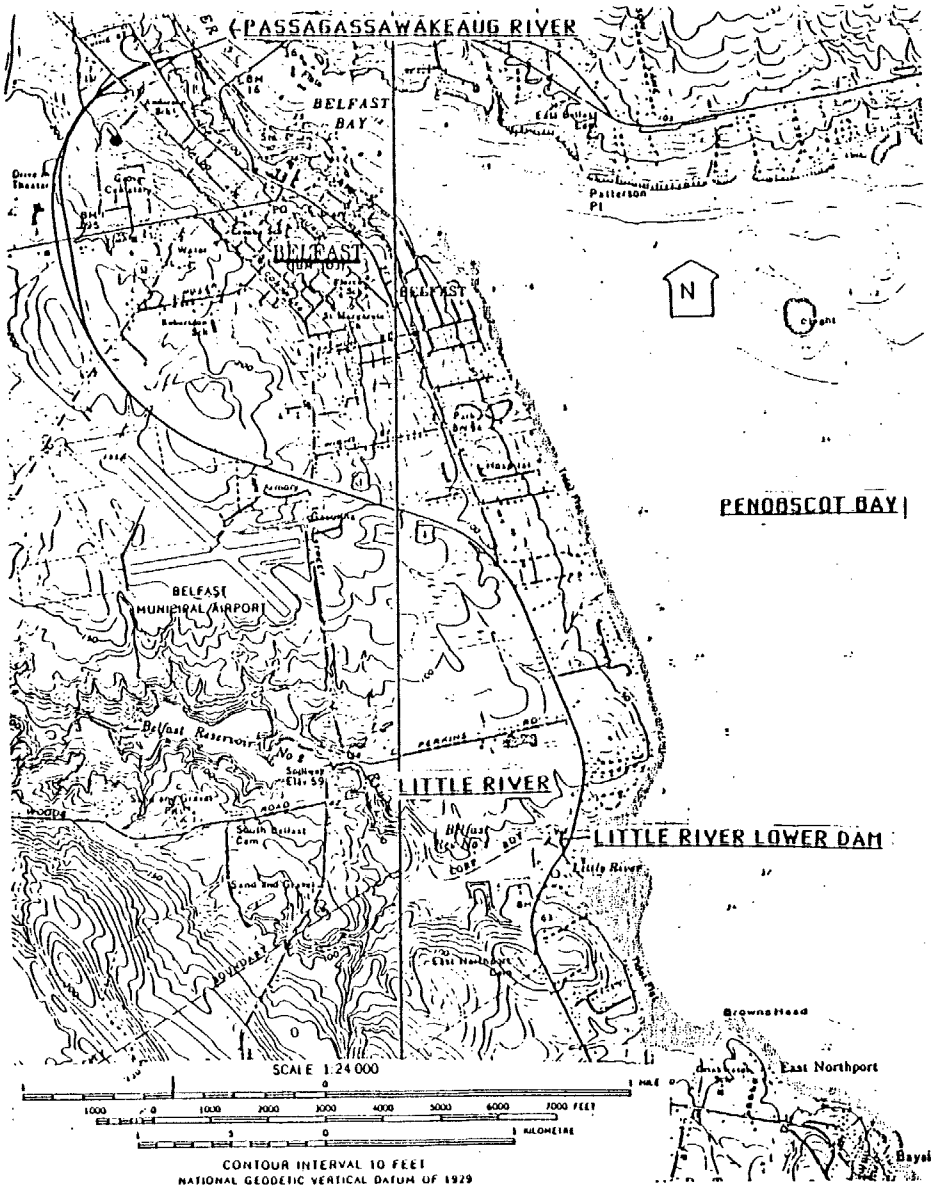
Norris D. Braley
RC&D Coordinator

cc: Archie Gaul, Director, Belfast Water District
Tom Smith, District Conservationist, SCS, Belfast
Tom Bruha, Corps of Engineers

LITTLE RIVER LOWER DAM
BELFAST, ME
LETTER REQUESTING STUDY
FEBRUARY 1987

ENCLOSURE 1





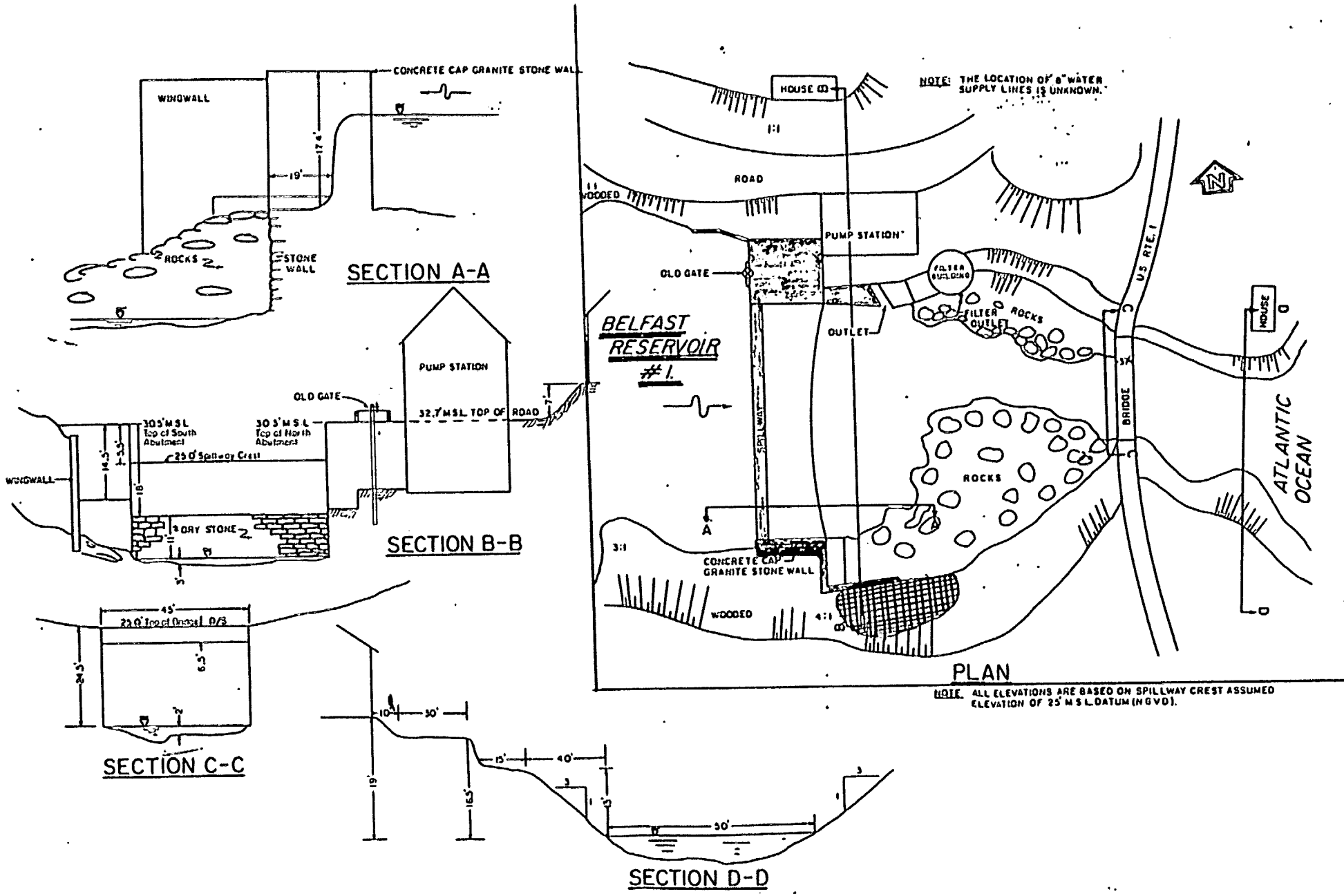
LITTLE RIVER LOWER DAM

BELFAST, ME

VICINITY MAP

FEBRUARY 1987

ENCLOSURE 2



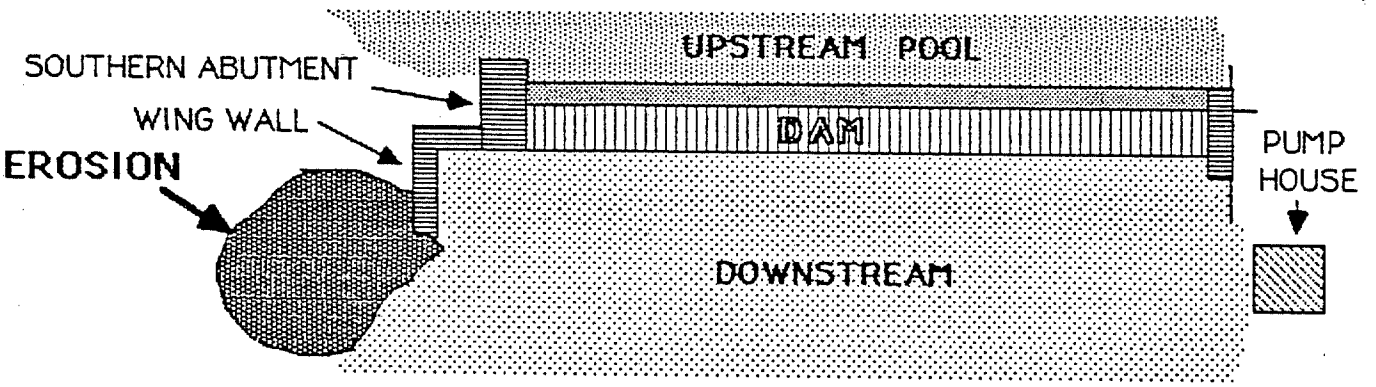
LITTLE RIVER LOWER DAM

BELFAST, ME

STUDY AREA MAP

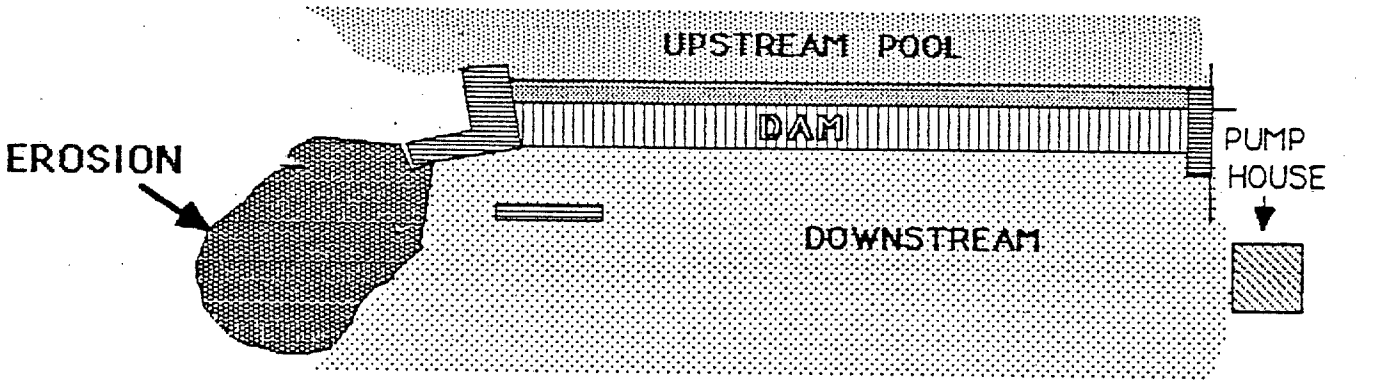
FEBRUARY 1987

ENCLOSURE 3



PRESENT CONDITIONS

N



WING WALL FAILS AND ABUTMENT SHIFTS

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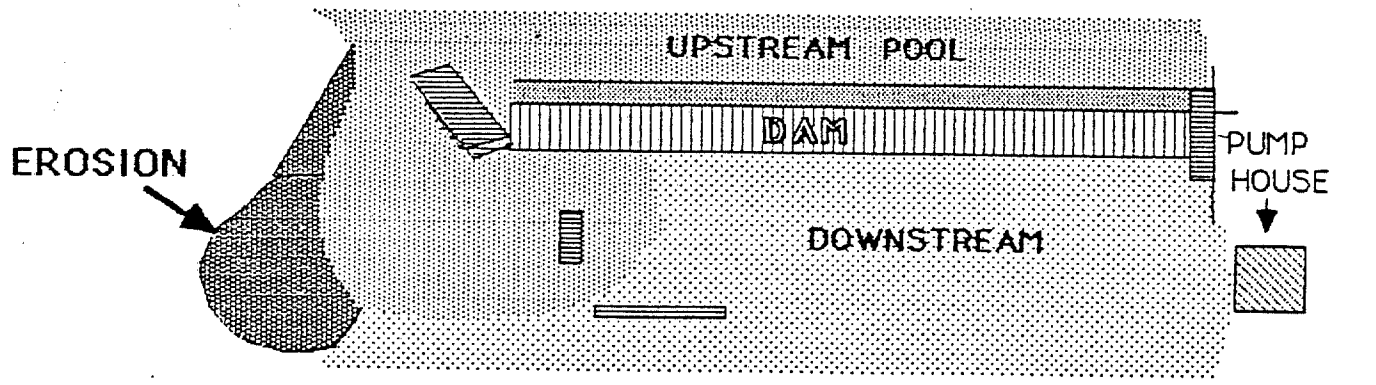


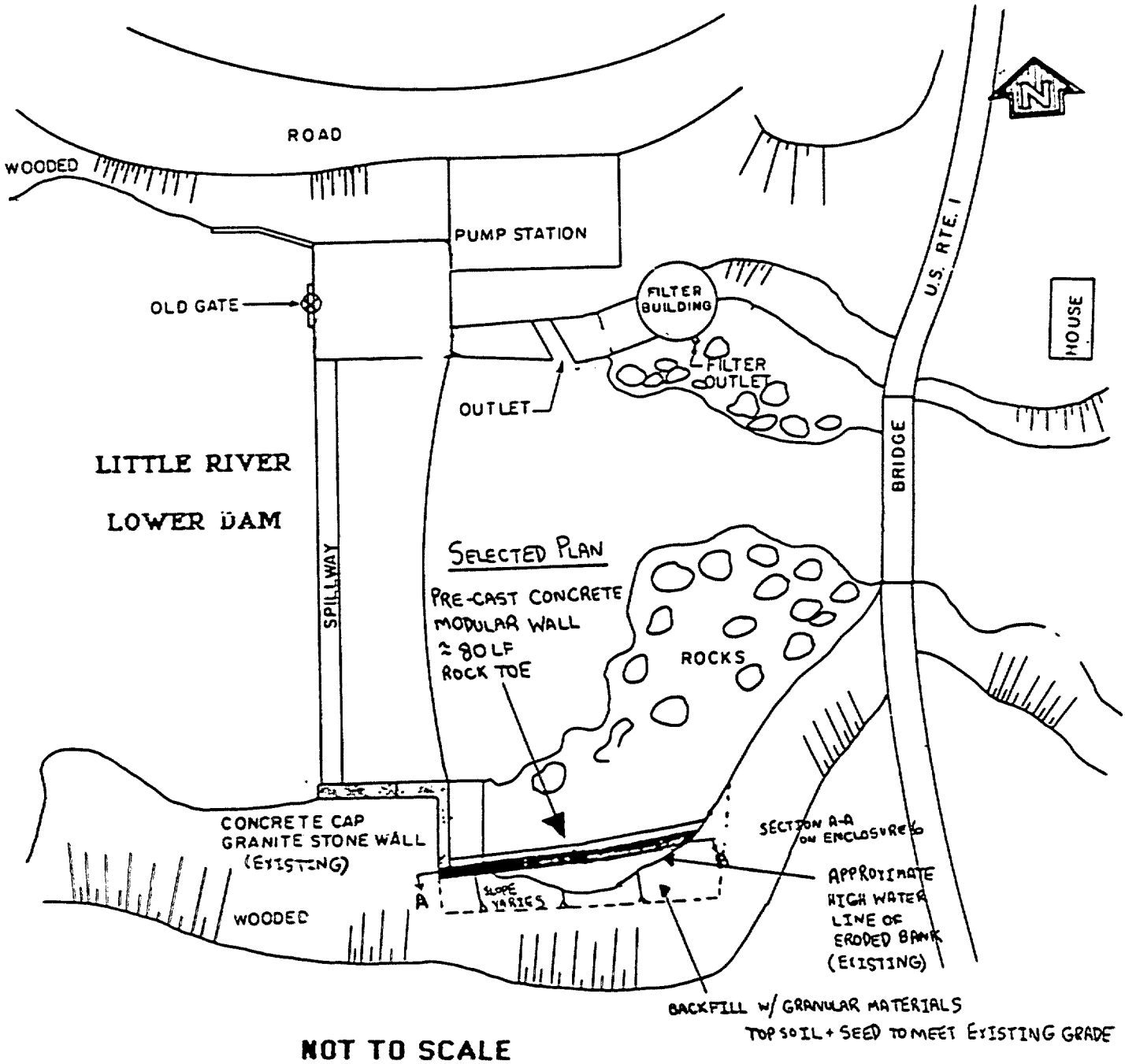
NOT TO SCALE

DAM IS BREACHED

N

LITTLE RIVER LOWER DAM
BELFAST, ME
METHOD OF FAILURE
FEBRUARY 1987

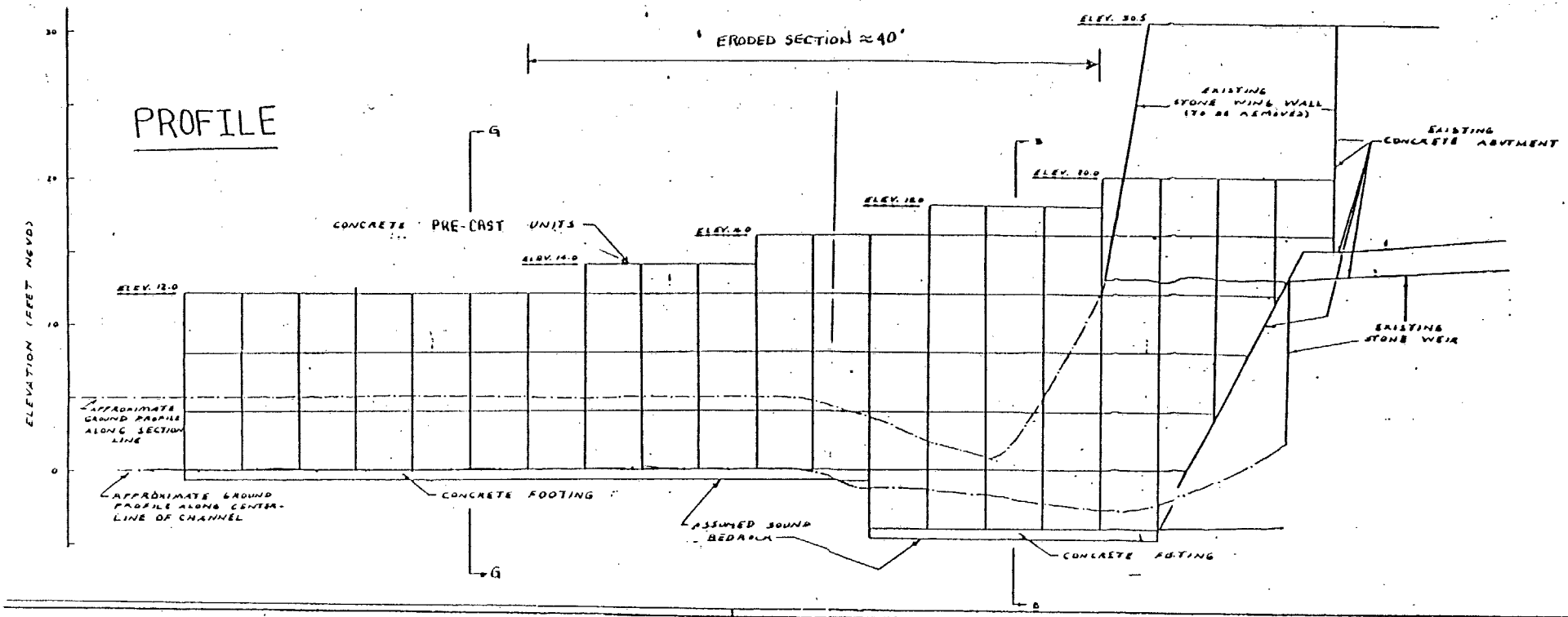
ENCLOSURE 4



NOT TO SCALE

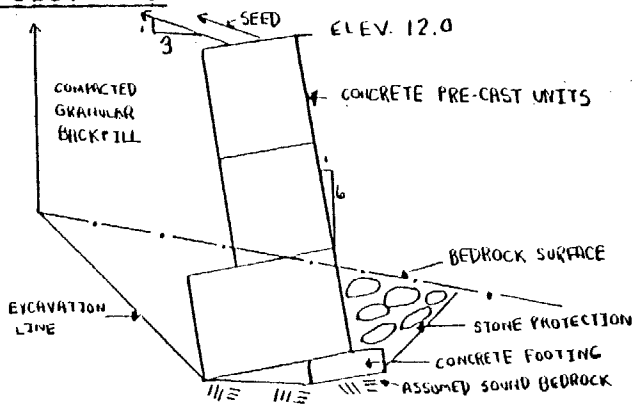
LITTLE RIVER LOWER DAM
BELFAST, ME
SELECTED PLAN
FEBRUARY 1987

ENCLOSURE 5

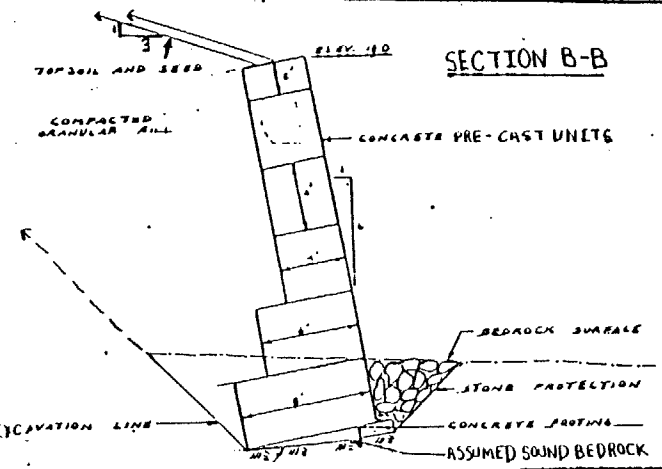


CROSS-SECTIONS

SECTION G-G



SECTION B-B



ENCLOSURE 6

LITTLE RIVER LOWER DAM
BELFAST, ME
SELECTED PLAN SECTIONS
FEBRUARY 1987

MAINE HISTORIC PRESERVATION COMMISSION
55 Capitol Street
State House Station 65
Augusta, Maine 04333

Earle G. Shettleworth, Jr.
Director

Telephone:
207-289-2133

April 16, 1987

Mr. Joseph Ignazio
Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02264-9149

Dear Mr. Ignezio:

Dr. Arthur Spiess of my staff has carefully fieldchecked the vicinity of your proposed emergency streambank protection project adjacent to the Little River Lower Dam, Belfast, Maine.

No prehistoric cultural material, and no significant historic sites, are located in the project area.

I find that this project will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

EGS/lae

LITTLE RIVER LOWER DAM
BELFAST, ME
ENVIRONMENTAL CORRESPONDENCE
FEBRUARY 1987

ENCLOSURE 7

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
P.O. BOX 1518
CONCORD, NEW HAMPSHIRE 03301

Joseph L. Ignazio, Chief
Planning Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

JAN 27 1987

Dear Mr. Ignazio:

This responds to your January 9, 1987 request for information on the presence of Federally listed and proposed endangered or threatened species within the impact area of a proposed erosion control project at the Lower Little River dam in Belfast, Maine.

Our review shows that except for occasional transient individuals, no Federally listed or proposed threatened and endangered species under our jurisdiction are known to exist in the project impact area. However, you may wish to contact the Maine Department of Inland Fisheries and Wildlife and the Maine Critical Areas Program for information on state listed species. No Biological Assessment or further consultation is required with us under Section 7 of the Endangered Species Act. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to endangered species under our jurisdiction. It does not address other legislation or our concerns under the Fish and Wildlife Coordination Act.

A list of Federally designated endangered and threatened species in Maine is enclosed for your information. Thank you for your cooperation and please contact us if we can be of further assistance.

Sincerely yours,

Gordon E. Beckett

Enclosure

Gordon E. Beckett
Supervisor
New England Area

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MAINE

Common Name	Scientific Name	Status	Distribution
FISHES:			
Sturgeon, shortnose*	Acipenser brevirostrum	E	Kennebec River & Atlantic Coastal Waters
REPTILES:			
Turtle, leatherback*	Dermochelys coriacea	E	Oceanic summer resident
Turtle, loggerhead*	Caretta caretta	T	Oceanic summer resident
Turtle, Atlantic ridley*	Lepidochelys kempii	E	Oceanic summer resident
BIRDS:			
Eagle, bald	Haliaeetus leucocephalus	E	Entire state - nesting habitat
Falcon, American peregrine	Falco peregrinus anatum	E	Entire state-reestablishment to former breeding range in progress
Falcon, Arctic peregrine	Falco peregrinus tundrius	E	Entire state migratory-no nesting
Plover, Piping	Charadrius melodus	T	Entire State - nesting habitat
MAMMALS:			
Cougar, eastern	Felis concolor couguar	E	Entire state - may be extinct
Whale, blue*	Balaenoptera musculus	E	Oceanic
Whale, finback*	Balaenoptera physalus	E	Oceanic
Whale, humpback*	Megaptera novaeangliae	E	Oceanic
Whale, right*	Eubalaena spp. (all species)	E	Oceanic
Whale, sei*	Balaenoptera borealis	E	Oceanic
Whale, sperm*	Physeter catodon	E	Oceanic
MOLLUSKS:			
NONE			
PLANTS:			
Small Whorled Pogonia	Isotria meleoloides	E	Kennebec, Cumberland, Oxford Counties
Lousewort, Furbish's	Pedicularis furbishiae	E	Aroostook County

* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service

Rev. 2/11/86

FEDERALLY PROPOSED ENDANGERED AND THREATENED SPECIES IN MAINE

Common Name	Scientific Name	Status	Distribution
Roseate Tern	Sterna dougallii dougallii	Proposed as Endangered 11/4/86	Statewide

Determination that this species is endangered would make it eligible for the protection provided by Section 7 of the Endangered Species Act of 1973, as amended. Proposed species are offered limited protection under Section 7(a)(4), which requires Federal agencies to confer with the Service on actions which may jeopardize the proposed species.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Management Division
Habitat Conservation Branch
2 State Fish Pier
Gloucester, MA 01930-3097

January 14, 1987 F/NER74:DB

Joseph L. Ignazio
Chief, Planning Division
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

Dear Mr. Ignazio:

This is in response to our letter of January 9, 1987, regarding the presence of endangered or threatened species under the jurisdiction of the National Marine Fisheries Service near the Lower Little River Dam in Belfast, Maine. There are no marine endangered or threatened species found near the proposed Erosion Control Project site. Therefore, there is no need for further consultation pursuant to Section 7 of the Endangered Act of 1973, as amended. Should project plans change or new information become available that changes the basis for this determination, then consultation should be reinitiated.

Sincerely,

Douglas W. Beach
Wildlife Biologist

BELFAST WATER DISTRICT

MEMBER OF
MAINE WATER UTILITIES ASSOCIATION
LITTLE RIVER PUMPING STATION
NORTHPORT AVENUE, P.O. BOX 506
BELFAST, ME 04915-0506
207-338-1200

April 16, 1987

Colonel Thomas A. Rhen, Division Engineer
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254

RE: Belfast Water District
Emergency Streambank Protection

Dear Colonel Rhen:

This letter provides the Belfast Water District's support and endorsement of the Corps of Engineers recommended streambank protection plan at the Little River Lower Dam. The proposed plan to construct a precast concrete modular wall adjacent to the abutment would alleviate the erosion that is endangering the southern abutment of the Little River Dam.

As outlined in the Detailed Project Report, dated February 1987, the Belfast Water District will:

1. Provide without cost to the United States, all lands, easements, rights-of-way, and utility relocations necessary for project construction.

2. Hold and save the United States free from damages due to the construction, operation and maintenance of the project, except where such damages are due to the fault or negligence of the United States or its contractors.

3. Maintain and operate the project after completion without cost to the United States in accordance with regulations prescribed by the Secretary of the Army. Annual operation and maintenance costs are currently estimated to be $300. This includes, but is not limited to, inspection, patchwork, etc.

4. Contribute 25 percent of actual cost of construction and preparation of Plans and Specifications. A minimum cash contribution of 5 percent of these costs is required. Non-Federal contribution is currently estimated at $35,000 (includes an estimated $10,000 for lands and damages and $25,000 as a cash contribution). Final cost sharing amounts will be determined when project design is substantially complete and real estate appraisals made.

ENCLOSURE 8

5. Assume the responsibility for all costs in excess of the Federal cost limitation of $500,000. Current project costs are estimated at $140,000.

6. Prevent future encroachment which might interfere with proper functioning of the project.

7. Comply with Title VI of the Civil Rights Act of 1964 (78th Stat. 241) and Department of Defense directive 5500.11 issued pursuant to and published in Part 300 of Title 32, Code of Federal Regulations.

8. Comply with the requirements of non-Federal cooperation specified in Sections 210 and 205 of Public Law 91-646 approved 2 January 1971, entitled: "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

The Belfast Water District has reviewed the Draft Local Cooperation Agreement (LCA) included in the Definite Project Report and agree with its requirements.

The Belfast Water District understands that a formal commitment for the local cash contribution will not be required until the plans and specifications are complete.

Sincerely,

BELFAST WATER DISTRICT

Jill B Goodwin

JILL B. GOODWIN
CHAIRMAN, BOARD OF TRUSTEES

JBG/ctc

LITTLE RIVER LOWER DAM
BELFAST, ME
LETTER OF INTENT
FEBRUARY 1987